USER MANUAL

04 CHANNELS DIGITAL VIDEO RECORDER

INSTRUCTION MANUAL

To obtain the best performance and ensure device function correctly, please read this instruction manual carefully and completely.

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FCC Compliance

USER-INSTALLER CAUTION: YOUR AUTHORITY TO OPERATE THIS FCC VERIFIED EQUIPMENT COULD BE VOIDED IF YOU MAKE CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE TO PART 15 OF THE FCC RULES.

NOTE: THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS A DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS.

OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

THIS CLASS A DIGITAL APPARATUS MEETS ALL REQUIREMENTS OF THE CANADIAN INTERFERENCE-CAUSING EQUIPMENT REGULATIONS.

WARNINGS, CAUTIONS & COPYRIGHT

WARINGS

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MISTURE.

DO NOT INSERT ANY METALLIC OBJECT THROUGH VENTILATION GRILLS.

CAUTION



CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK.

DO NOT REMOVE COVER (OR BACK).

NO USER-SERVICEABLE PARTS INSIDE.

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL

Explanation of Graphical Symbols



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of insinuated "dangerous voltage" within the products enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral rhombus is intended to alert the user to the presence of important operating and maintenance (servicing) instruction in the literature accompanying the product.

USERS OF THE SYSTEM ARE RESPONSIBLE FOR CHECKING AND COMPLYING WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND STATUTES COIPCERNING THE MONITORING AND RECORDING OF VIDEO AND AUDIO SIGNALS. ULTRAK SHALL NOT BE HELD RESPONSIBLE FOR THE USE OF THIS SYSTEM IN VIOLATION OF CURRENT LAWS AND STATUTES.

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THE TRADEMARKS MENTIONED IN THE MANUAL ARE LEGALLY REGISTERED TO THEIR RESPECTIVE COMPANIES.

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1 INTRODUCTION

1.1 FEATURE

- H.264 video compression.
- 120 PPS
- Recording quality/ rate adjustment per channel available.
- Support CMS (Central Management System)/ 3GPP.
- Audio Backup / Audio Streaming.
- Graphic User Interface (GUI).
- Support time-point backup function under Ethernet remote control mode. User can select any time period to process backup from remote side.
- Support time-search & event-search function under Ethernet remote control mode.
- Up to four online clients for independent remote control; individual live-time, play-back & time-search function available.
- Support PPPoE/ Static/ DHCP IP & DDNS.
- Real Triplex, recording/ live-time & playback operation at the same time available.
- ID function supplied from IR remote controller. User can control different DVRs at the same time by using one IR remote controller.

1.2 SPECIFICATION

VIDEO				
MODE	Triplex			
IMAGE SYSTEM	NTSC	PAL		
LIVE-TIME RESOLUTION	720x480	720×576		
LIVE-TIME DISPLAY RATE	4 × 30 Frame / Sec	4 × 25 Frame / Sec		
SPLIT SCREEN	1, 4			
VIDEO INPUT BNC × 4				
VIDEO LOOPING	No			
VIDEO OUTPUT (BNC)	BNC × 1			
VIDEO OUTPUT (SPOT MONITOR)	No			
VIDEO OUTPUT (S-VIDEO)	No			
VIDEO OUTPUT (VGA)	Yes			
AUDIO				
AUDIO INPUT	RCA × 1			
AUDIO OUTPUT	RCA × 1			
AUDIO BACKUP	Yes			
AUDIO STREAMING	Yes			

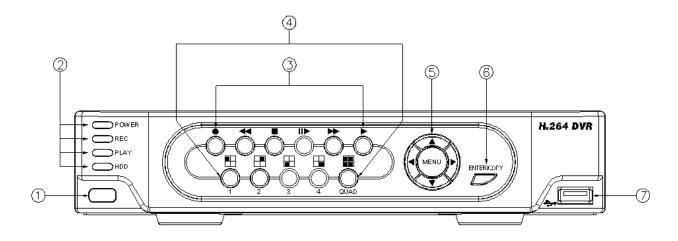
	RECORDING		
COMPRESSION TYPE	H.264		
RECORDING RESOLUTION (HALF D1)	720×240	720×288	
RECORDING RESOLUTION (CIF)	360x240	360x288	
RECORDING RATE (HALF D1)	720 x 240 up to 60 PPS	720 x 288 up to 50 PPS	
RECORDING RATE (CIF)	360 x 240 up to 120 PPS	360 x 288 up to 100 PPS	
COMPRESSION RATE	Low: 1 K Bytes Medium: 2.2 K Bytes High: 3.2 K Bytes Best: 6 K Bytes		
RECORDING MODE	Manual / Schedule		
PLA	YBACK & SEARCH		
PLAYBACK SPEED		X 4 X 8 X 4 X 8	
TIME SEARCH	Yes		
EVENT SEARCH	Yes		
EVENT LIST	3000 records per H.D.D (Ma	ximum)	
OSD & C	CONTROL INTERFACE		
TITLE	8 Characters		
ON SCREEN DISPLAY & SETUP	Time / Date / Setup Menu		
GRAPHIC USER INTERFACE (GUI)	Yes		
DVR CONTROL PANEL	Yes		
MOUSE	Yes (Optional)		
IR REMOTE CONTROLLER	Yes (Optional)		
IE BROWSER	Yes		
PLAYER	Yes		
STORAGE & BACKUP DEVICE			
INTERNAL HDD SUPPORT	SATA HDD x 1		
USB BACKUP	Yes		
CD/ DVD RW BACKUP	No		
NETWORK			
ETHERNET	Yes		
ETHERNET COMPRESSION FORMAT	H.264		
DDNS	Yes		

E-MAIL & FTP	Yes		
NETWORK IP	Static/ Dynamic/ PPPoE		
MULTI-REMOTE CLIENT	Yes (4 Clients at the same time available)		
PDA/ CELL PHONE SUPPORT	Yes (MPEG4)		
3GPP	Yes (MPEG4)		
-	ALARM		
ALARM INPUT	4 In (NO/ NC)		
ALARM OUTPUT	1 Out (NO/ NC)		
MOTION DETECTION	Yes		
MOTION DETECTION AREA	30 x 24 grids		
MOTION DETECTION SENSITIVITY	1-100		
VIDEO LOSS DETECTION	Yes		
ALARM RECORDING	Yes		
BUZZER	Yes		
SETUP	& OTHER FUNCTIONS		
DAYLIGHT SAVING TIME	Yes		
PTZ CONTROL	Yes		
RS-232	No		
RS-485	Yes		
DIGITAL ZOOM	Yes		
PASSWORD CONTROL	Three levels, one for system, one for HDD format and the other for Network Password.		
KEY-LOCK	Yes		
MULTI-LANGUAGE	Yes		
FIRMWARE UPDATE	USB Host & Update on line		
OTHERS			
POWER INPUT	DC 12V		
POWER CONSUMPTION (W)	12W (Without HDD)		
DIMENSIONS (W x H x D)	218mm (W) × 44mm (H) × 202mm (D)		
WEIGHT (kg)	2.2Kg (Without HDD)		
OPERATION TEMPERATURE	0 - 45 ℃		

^{*} SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

2 HARDWARE OVERVIEW

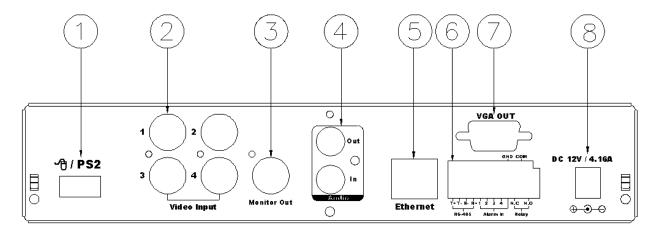
2.1 FRONT PANEL



DVR OPERATION

NO.	LABEL	OPERATION	P	TZ
1		IR Sensor For Remote Control.		
2	LED REC	Led Indicator		
3	CONTROL PANEL	Record, Playback And Control Button.		
4		Press The Button To Display No.1~No.4 Full Screen and Quad Screen		
5		Button Of Menu Screen	UP, LEFT RIGH	
6	ENTER ©	ENTER and BACKUP Button		
7	***	USB Connector.		

2.2 BACK PANEL



NO.	LABEL	OPERATION
1	₽	USB Mouse Connector (Only by supplied mouse).
2	VIDEO INPUT	Video input with BNC connector.
3	MONITOR OUT	Video output with BNC connector.
4	AUDIO OUT/ IN	Audio output/ input.
5	ETHERNET	RJ-45 connector for network.
6	RS-485/ ALARM/ RELAY	4 pin connector for external control unit, 5 pin connector for Alarm input and 3 pin connector for relay
7	VGA D-SUB OUT	Connect to CRT or LCD monitor.
8	POWER	Power switcher: DC 12V 5A / 50-60 Hz input.

NOTE: Please plug in the supplied mouse to DVR mouse connector before turn on the DVR. DO NOT REMOVE and PLUG IN the supplied mouse while DVR is operating.

2.3 ADVANCED AUTO SWITCH, ZOOM, PTZ, COPY KEY CONTROL & USB INFORMATION

AUTO SWITCH: In the split screen mode, use the "QUAD+ → " keys in the front panel to enable auto switch function. Moreover, press " key again to disable it.

ZOOM: In the full screen mode, user can use compound key "ENTER/COPY" on the front panel to perform ZOOM function. Press ▲ ▼ ◀ ▶, located on the front panel, to move the zoom window.

PTZ: When camera supported PTZ function, user can use " ▶ " button on the front panel to perform PTZ function. Press ▲ ▼ ◀ ▶ to select and change setup value.

COPY: Within the playback mode, press "ENTER/ COPY" button to start backup record and press "ENTER/ COPY" again to end backup. The user can see the backup image approx. 3 ~5 sec.

USB INFORMATION: Within the LIVE VIEWING, press "ENTER" key in the front panel will present the USB information. (NOTE: Please confirm that USB Device has plugged into DVR.)

2.4 EXTERAL ALARM

There are three types of alarms that the system can be configured to handle. They are Motion detection Alarm, External Alarm and Video Loss Alarm.

A. Motion detection Alarm and External Alarm:

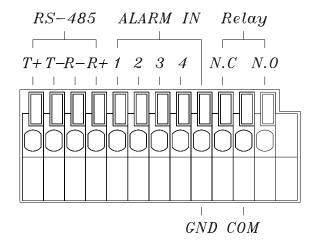
When motion detection or External Alarm was triggered, there are 5 possible actions will be taken.

- a. Changes recording speed as alarm recording speed.
- b. Monitor will display corresponding full screen alarm channel, it will switch automatic mode to manual mode if buttons pressing activity occurred in 5 seconds.
- c. Relays can be activated by motion detection or external alarm when turning on.
- d. The camera title will be transformed into color of yellow when motion is happening, "ALARM" text will show up when external alarm is triggered.

B. Video Loss Alarm:

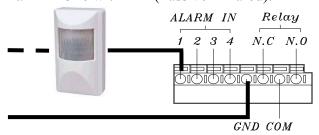
The default setting of Video Loss alarm is enabled.

Terminal Connectors:

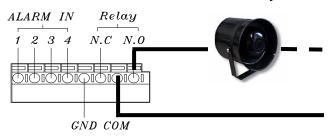


T+	RS-485 sends +
T -	RS-485 sends -
R-	RS-485 receives -
R+	RS-485 receives +
ALARM1-4	Camera alarm input.
GND	GND.
N.C	Relay N.C.
COM	Relay COM
N.O	Relay N.O.

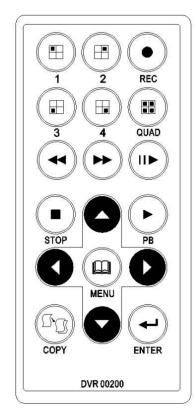
EXAMPLE 1: Connect Alarm In One with PIR (Passive Infrared).



EXAMPLE 2: Connect with Alarm Siren at Relay N.O.



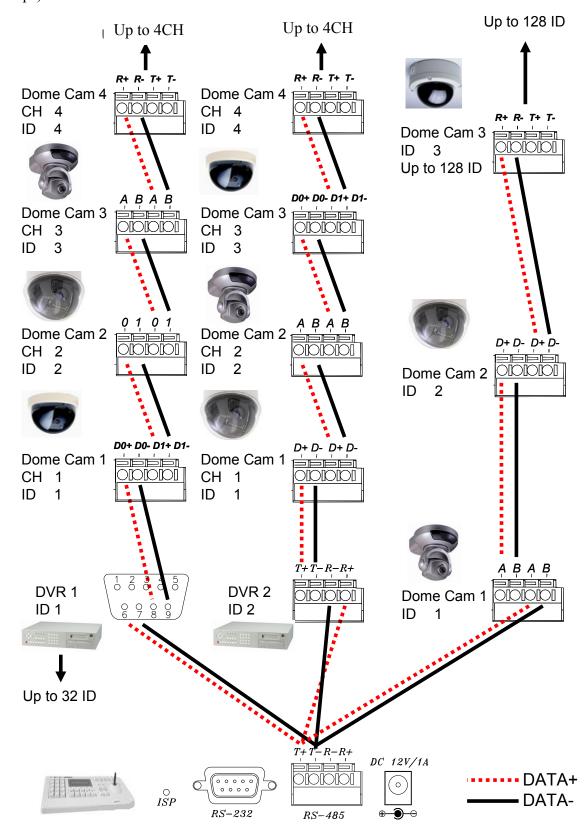
2.5 IR REMOTE CONTROL



ITEM		
REC	Press REC to start recording and press twice to stop.	
1 - 4	Select channel 1-4 with full screen.	
QUAD	Fast backward.	
«	Picture by picture backward.	
	Picture by picture forward.	
>>	Fast Forward.	
	Play video forward.	
COPY	Switch channel format.	
A	Move upward or increase the number.	
•	Move rightward or increase the number.	
•	Move downward or decrease the number.	
•	Move leftward or decrease the number.	
4	Enter selected items.	
MENU	Enter or Exit Main Menu.	
STOP	Stop the playback.	

2.6 PTZ (PAN, TILT AND ZOOM) CAMERA

Following diagram for DVR connect between PTZ camera & joystick controller, for DVR to control PTZ camera please make sure the CAMERA ID, BANDRATE (default at 9600 bps) and RS-485 cable.

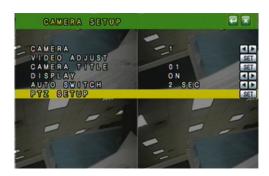


3 SYSTEM SETUP

3.1 MENU SETUP INTERFACE(GUI)























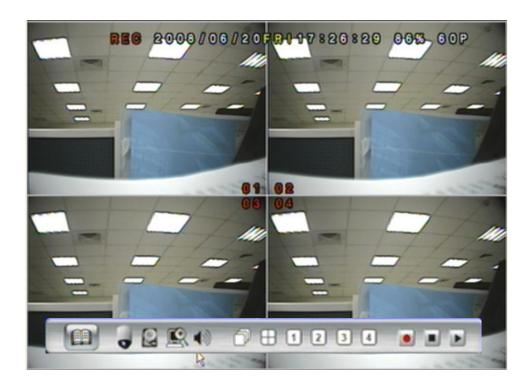








3.2 LIVE VIEWING AND POP-UP MENU



NOTE: The pop-up menu can be activated by moving the mouse cruise to the bottom of the live viewing screen.



GUI MENU BAR

With live viewing mode, press this button to get into the GUI menu.



DISK INFORMATION

With live viewing mode, press this button to display disk information.



DIGITAL ZOOM

In the full screen mode, left-click the button of the mouse to pull a range to zoom in or zoom out the image. User can right-click the button of the mouse to disable this function. (NOTE: Using the mouse to operate digital zoom can zoom in to max. 16 times.) Moreover, user can also use compound key on the front panel to perform this function. (First, click ENTER/COPY Key and then click $\blacktriangle \lor \blacktriangleleft \gt$ key to select zoom in or zoom out position. Finally, click ENTER/COPY key again to complete the setting. Moreover, click MENU Key to disable digital zoom function. Using the panel key to perform zoom in function is fixed at 2 times.)

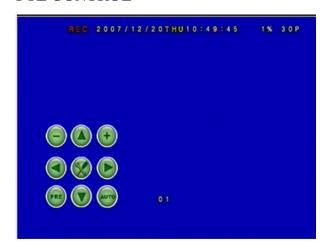


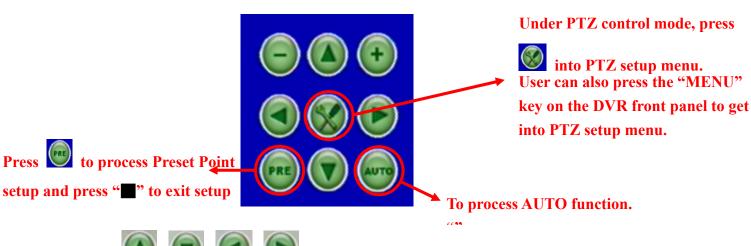
D. PTZ CONTROLLER

Within live-viewing mode, Clicks this button to get into the PTZ setup menu. User can also use PTZ key on the front panel to perform this function. Moreover, user can right-click the button of the mouse or press the PTZ key on the front panel again to exit PTZ Setup.

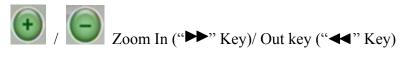
NOTE: Only for the camera supported PTZ function.

PTZ CONTROL

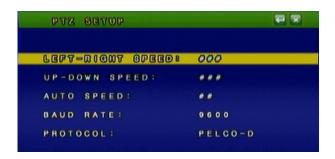








PTZ SETUP MENU



LEFT-RIGHT SPEED: Use the mouse wheel to change the left-right speed. UP-DOWN SPEED: Use the mouse wheel to change the up-down speed. AUTO SPEED: Use the mouse wheel to change the auto patrol speed. BAUD RATE: Use the mouse wheel to change the BAUD rate. PROTOCOL: Use the mouse wheel to change the connection protocol.

E. AUDIO CONTROL

Press this button to turn the audio on or off.

F. DISPLAY CONTROL

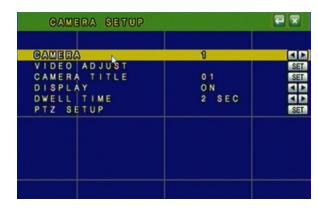
Within live-viewing or playback mode, use display control to switch the camera channel.

G. RECORD AND PLAYBACK CONTROL

Same as front panel controller and remote controller.



CAMERA SETUP



Press ▲ or ▼ to select items.

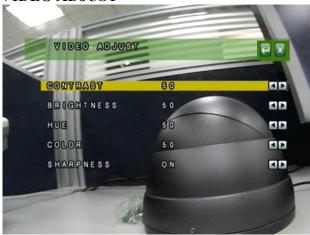
Press ◀ or ► to change values.

Press SET to see more options.

A. CAMERA

Press \triangleleft or \triangleright / mouse wheel to switch channels.

B. VIDEO ADJUST



B-1. CONTRAST

Press ◀ or ►/ mouse wheel to change contrast level.

B-2. BRIGHTNESS

Press ◀ or ▶/ mouse wheel to change brightness level.

B-3. HUE

Press ◀ or ►/ mouse wheel to change HUE level.

B-4. COLOR

Press \triangleleft or \triangleright / mouse wheel to change color level.

B-5. SHAPRNESS

Press ◀ or ▶/ mouse wheel to change sharpness level.

C. CAMERA TITLE



Use mouse to select and change character.

D. DISPLAY

Press \triangleleft or \triangleright to/ mouse wheel change value for the corresponding camera would be displayed on the screen or not.

E. DWELL TIME

Press ◀ or ▶/ mouse wheel to ON/OFF auto switch and the switch sec..

F. PTZ SETUP



LEFT-RIGHT SPEED: Use the mouse wheel to change the left-right speed.

UP-DOWN SPEED: Use the mouse wheel to change the up-down speed.

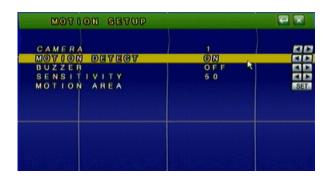
AUTO SPEED: Use the mouse wheel to change the auto patrol speed.

BAUD RATE: Use the mouse wheel to change the BAUD rate.

PROTOCOL: Use the mouse wheel to change the connection protocol.



MOTION SETUP



Press ▲ or ▼ to select items.

Press ◀ or ▶ to change values.

Press SET to see more options.

A. CAMERA

Press \triangleleft or \triangleright / mouse wheel to switch channels.

B. MOTION DETECT

Press ◀ or ▶/ mouse wheel to change value for motion detect function.

C. BUZZER

Press ◀ or ▶/ mouse wheel to change value for buzzer while motion detected.

D. SENSITIVITY

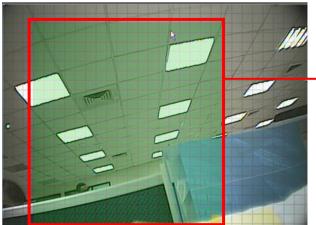
Press ◀ or ►/ mouse wheel to change sensitivity value from 001 (minimum) to 100 (maximum).

E. AREA SETUP

1. Press **SET** to enter Motion Area Setting. (**Note: The default setting of all area is "MOTION ON".**)

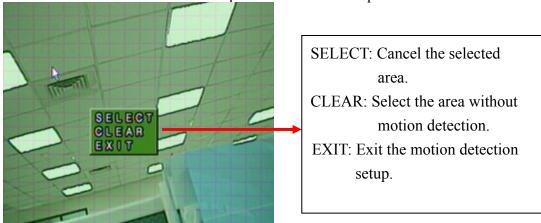


2. Use the mouse to select which block is needed.

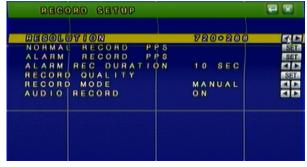


The green area shows the area without motion detection.

3. Left-Click the mouse to see more options or exit the setup.



3.5 RECORD SETUP



Press ▲ or ▼ to select items. Press ◀ or ▶ to change

Press SET to see more options.

A. RESOULTION

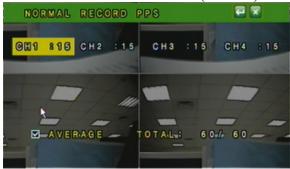
Press ◀ or ►/ mouse wheel to switch record resolution.

720 x 240 (NTSC)/ 720 x 288 (PAL). 360 x 240 (NTSC)/ 360 x 288 (PAL).

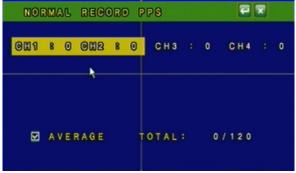
B. NORMAL RECORD PPS

Press **SET** to change the PPS in normal recording. User can click "AVERAGE" to set PPS automatically by system or change the PPS for each channel manually.

Record Resolution: 720×240 (NTSC) / 720×288 (PAL)



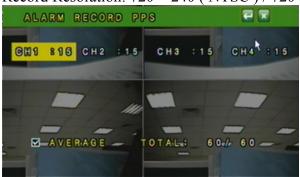
Record Resolution: 360×240 (NTSC) / 360×288 (PAL)



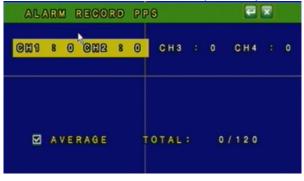
C. ALARM RECORD PPS

Press **SET** to change the PPS in alarm recording. User can click "AVERAGE" to set PPS automatically by system or change the PPS for each channel manually.

Record Resolution: 720×240 (NTSC) / 720×288 (PAL)



Record Resolution: 360×240 (NTSC) / 360×288 (PAL)



D. ALARM RECORD DURATION

Press ◀ or ▶ to set dwell time of alarm recording.

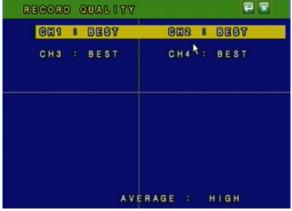
E. RECORD QUALITY

Press **SET** to switch image quality of each channel $(720 \times 240 \text{ (NTSC)} / 720 \times 288 \text{ (PAL)})$ or each two channels $(360 \times 240 \text{ (NTSC)} / 360 \times 288 \text{ (PAL)})$. User can use mouse wheel to change the image quality of each single channel: LOW/ MEDIUM/ HIGH/ BEST, or use "AVERAGE" to switch the image quality of all channels at once.

Record Resolution: 720×240 (NTSC) / 720×288 (PAL)



Record Resolution: 360×240 (NTSC) / 360×288 (PAL)



F. RECORD MODE

Press ◀ or ▶ to switch record mode to ALWAYS/ MOTION/ SCHEDULE / OFF.

G. AUDIO RECORD

Press ◀ or ▶ to switch AUDIO RECORD ON or OFF.

H. SCHEDULE SETUP

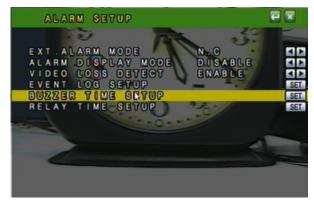
Press **SET** to get into schedule setup menu •



- 1. Use mouse to select schedule day/ time/ mode.
- 2. Click to save change and exit.



ALARM SETUP



Press ▲ or ▼ to select items.

Press ◀ or ▶ to change values.

Press SET to see more options.

A. EXT. ALARM MODE

Select N.C for "normal close" alarm input, or select N.O for "normal open" alarm input.

B. ALARM DISPLAY MODE

Press ◀ or ►/ mouse wheel to change value for ALARM DISPLAY MODE with full screen.

C. VIDEO LOSS DETECT

Press ◀ or ▶/ mouse wheel to switch VIDEO LOSS ALARM ON or OFF.

D. EVENT LOG SETUP

Press **SET** to change value for MOTION EVENT / VIDEO LOSS EVENT to ON / OFF.

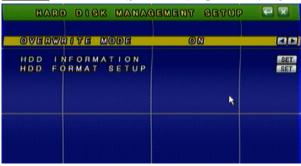
E. BUZZER TIME SETUP

Press **SET** to set dwell time of BUZZER/ ALARM.

F. RELAY TIME SETUP

Press **SET** to set dwell time of RELAY.

3.7 HARD DISK MANAGEMENT SETUP



Press ▲ or ▼ to select items.

Press ◀ or ► to change values.

Press SET to see more options.

A. OVERWRITE MODE

Press ◀ or ▶ to change value OVERWRITE MODE ON or OFF.

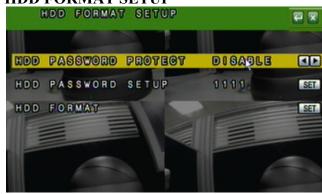
B. CAPACITY WARNING (When Overwrite Mode is OFF, Capacity Warning will enable)

Press ◀ or ▶ to change value to 20/15/10 or 5% with non-overwrite mode. When LEFT RATIO is below the setting, it will enable AUDIBLE ALARM (If AUDIBLE ALARM of BUZZER of ALARM SETUP is ON).

C. HDD INFORMATION

Press SET to display HDD information.

D. HDD FORMAT SETUP



D-1. HDD PASSWORD PROTECT

Press \blacktriangleleft or \blacktriangleright / mouse wheel to change value for hard disk format password protection.

D-2. HDD PASSWORD

Press **SET** then use mouse to change password.

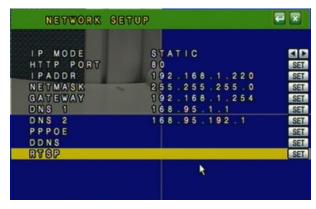
Default password: 1111

D-3. HDD FORMAT

Press **SET** to get into FORMAT setup.

Press YES or NO to execute.

3.8 NETWORK SETUP



Press ▲ or ▼ to select items.

Press ◀ or ► to change values.

Press SET to see more options.

A. IP MODE

Press \blacktriangle or \blacktriangledown to select items and \blacktriangleleft or \blacktriangleright / mouse wheel to change to STATIC IP or DHCP.

B. HTTP PORT

Press \blacktriangle or \blacktriangledown to select items and \blacktriangleleft or \blacktriangleright / mouse wheel to change WEB PAGE PORT.

C. IP ADDR

Press \triangle or ∇ to select items and **SET** to change IP ADDRESS.

D. NETMASK

Press ▲ or ▼ to select items and SET to change SUBNET MASK.

E. GATEWAY

Press ▲ or ▼ to select items and SET to change Default GATEWAY.

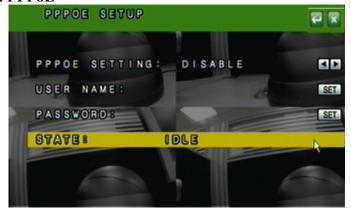
F. DNS1

Press \triangle or ∇ to select items and **SET** to change DNS.

G. DNS2

Press \blacktriangle or \blacktriangledown to select items and **SET** to change OTHER DNS.

H. PPPoE



H-1. PPPoE SETTING

Press or ▶/ mouse wheel to ENABLE / DISABLE PPPoE.

H-2. USER NAME

Use mouse to setup user name for ADSL account.

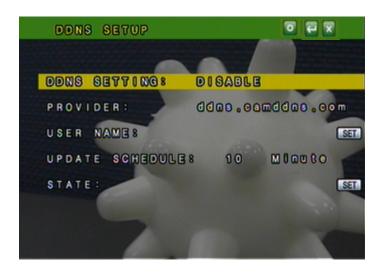
H-3. PASSWORD

Use mouse to setup password for ADSL account.

H-4. STATE

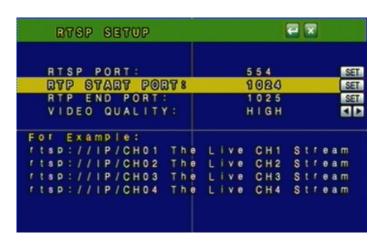
Press SET to display status of PPPoE •

I. DDNS SETUP



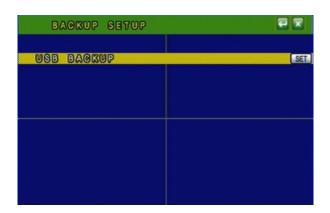
- **I-1. DDNS SETTING**: Press ✓ or ►/ mouse wheel to set DDNS ENABLE / DISABLE.
- **I-2. PROVIDER**: Press or ▶/ mouse wheel to select DDNS provider.
- **I-3. USER NAME**: Press **SET** to setup user name.
- **I-4. UPDATE SCHEDULE**: Use **SET** to dwell time of updating schedule.
- **I-5. STATE**: Press **SET** to display status of DDNS.

J. RTSP SETUP



- **J-1. RTSP PORT:** Press **SET** to setup RTSP port. The default value is 554.
- **J-2. RTP START PORT:** Press **SET** to setup RTP start port.
- **J-3. RTP END PORT:** Press **SET** to setup RTP end port.
- **J-4. VIDEO QUALITY:** Press ◀ or ▶/ mouse wheel to select video quality. There are BEST, HIGH, STANDARD, MEDIUM & LOW five options.

3.9 BACKUP SETUP



NOTE: *For function stability, Ethernet remote control function (IE) will be stopped when processing backup function.

*USB DEVICE BACKUP: 3.2MB/ per sec.

A. USB BACKUP

Due to each USB device with different USB driver ICs, their compatibilities differ, too. This system is compatible with most of USB flash memory. If there is compatible issue, please refer to **APPENDIX B**. In addition, please format USB flash memory with FAT32.

BEFORE BACKUP

- A. In live viewing mode, insert USB device into a USB port of the DVR.
- B. Get into playback mode by PLAY TIME SEARCH or EVENT LIST SEARCH and play back videos that are going to be as backup.

VIDEO BACKUP

In multiplexer or full screen mode, press to start backup and press to end backup. The system will backup automatically.

PICTURE BACKUP

In multiplexer or full screen mode, press in and press and press. The system will start backup picture by picture.

USB BACKUP MENU



• User can use the mouse wheel to change the backup Start/ End time •



• Click to start backup, the total process will be shown on screen.



BACKUP FILE NAME

Each backup file will be named as START TIME.

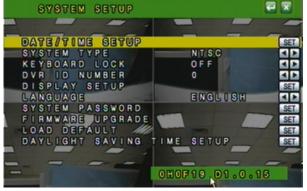
EXAMPLE: 174624.264 is 17:46:24

AFTER BACKUP

After backup, the system will copy "R6VIEWER.EXE" automatically on USB device for the user to play back backup file.



SYSTEM SETUP



Press ▲ or ▼ to select items.

Press ◀ or ► to change values.

Press SET to see more options.

A. DATE / TIME SETUP

Press **SET** to set DATE / TIME.

A-1. TIME

Use mouse wheel to change DATE/ TIME.

A-2. DATE FORMAT

Use mouse wheel to change DATE. There are DD/MM/YYYY, YYYY/MM/DD and MM/DD/YYYY three modes.

A-3. NTP MODE

Use mouse wheel to change NTP. When NTP is enable, use **SET** to change SERVER IP and use ◀ or ►/ mouse wheel to change GMP and UPDATE TIME.



B. SYSTEM TYPE

Press \triangleleft or \triangleright / mouse wheel to change the system type.

C. KEYBOARD LOCK

Press ◀ or ►/ mouse wheel to switch ON/ OFF. There are OFF, TYPE 1 and TYPE 2 three options.

OFF: UNLOCK.

TYPE 1: Only can switch split screen and full screen. The user can operate AUTO and MENU functions as well. However, the password has to be filled in to implement playback mode.

TYPE 2: LOCK (Except MENU button). The password has to be filled in to implement playback mode.

After KEYBOARD LOCK mode setup, please set up **PASSWORD**Without password, un-authorized users could access into SYSTEM SETUP and make changes of settings easily.

D. DVR ID NUMBER

Press \triangleleft or \triangleright / mouse wheel to change values.

ID NUMBER is required to make difference of each DVR.

E. DISPLAY SETUP

Press SET to ENABLE or DISABLE display of CAMERA TITLE / DVR STATUS / DATE / TIME.

F. LANGUAGE

Press ◀ or ▶ to change on-screen-display (OSD) language.

G. SYSTEM PASSWORD

Press \blacktriangle or \blacktriangledown to select items and \blacktriangleleft or \blacktriangleright to change values. Default password: 1111.

H. FIRMWARE UPDATE

Press **YES** to start firmware update. After updated, the DVR will reboot automatically. At this moment, please do not turn off the DVR manually.

NOTE: 1. Please format USB flash memory with FAT32.

2. For function stability, we suggest user to STOP recording function before processing firmware update function.

I. LOAD DEFAULT

Press **SET** button to entry CONFIGURE SET screen. There are LOAD SETUP FROM DEFAULT, LOAD SETUP FROM USB and BACKUP SETUP TO USB three parts.



- **I-1. LOAD SETUP FROM DEFAULT:** Press **SET** button to load the setting back to factory default.
- **I-2. LOAD SETUP FROM USB:** Press **SET** button to load the pen drive setting to the current DVR.
- **I-3. BACKUP SETUP TO USB:** Press **SET** button to backup the current DVR setting into pen drive.

J. DAYLIGHT SAVING TIME SETUP

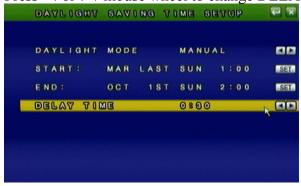
Press ◀ or ►/ mouse wheel to change the DAYLIGHT MODE option: Disable, Manual and Auto.



J-1. MANUAL MODE

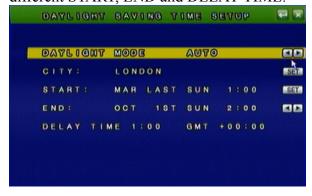
Use **SET** to change the Day Light Saving start and end time.

Press ◀ or ►/ mouse wheel to change DELAY TIME

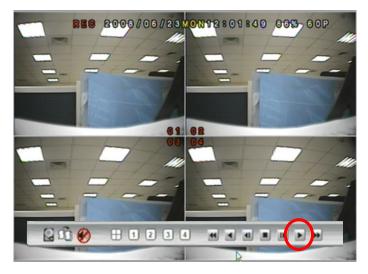


J-2. AUTO MODE

Press ◀ or ►/ mouse wheel to change CITY option. Different CITY will have different START, END and DELAY TIME.



4 DVR PLAYBACK



Click the playback button on the pop-up menu

Note: the pop-up menu can be activated by moving the mouse cruise to the bottom of the live viewing screen.

A. DISK INFORMATION

With playback mode, press this button to display disk and pen drive information.

B. RECORD BACKUP

With playback mode, press this button to backup record (.264 video backup) and press this button again to finish backup. For performing the single image backup (.Y42 single image backup), press first and then click this button to backup the necessary image.

C. AUDIO CONTROL

Press this button to turn the audio on or off

D. DISPLAY CONTROL

Within playback mode, use display control to switch the camera channel.

E. RECORD AND PLAYBACK CONTROL

Same as front panel controller and remote controller.

4.1 TIME SEARCH

Double click Left button of mouse to trigger play time search.



Please set the start and end time to search.

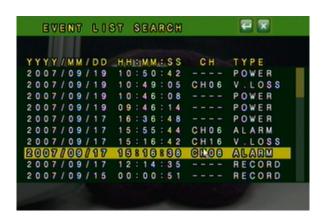


4.2 EVENT SEARCH

Double click Left button of mouse to trigger event search.



Please select the event to playback.



NOTE: Display the type of the event as follows.

POWER	If the DVR got power loss, it will record the date and time of	
	rebooting.	
RECORD	If REC. button has been pressed, it will record the date and time in the	
	event list.	
V.LOSS	When a camera signal is lost, it will record the date, time, and	
	corresponding channel. Moreover, the Vicon will display on the	
	corresponding channel.	
ALARM	When ALARM is triggered, it will record the date, time, and	
	corresponding channel. Moreover, the low icon will display on the	
	corresponding channel.	
MOTION	When MOTION is detected, it will record the date, time, and	
	corresponding channel. Moreover, the icon will display on the	
	corresponding channel.	

5 BACKUP PLAYBACK

SYSTEM REQUIREMENT

CPU: Intel Celeron 1.6G MEMORY: 256MB.

VGA: 32MB

5.1

VGA RESOLUTION: 1024 x 768.

OS: Windows XP / 2000

SUGGESTED REQUIREMENT

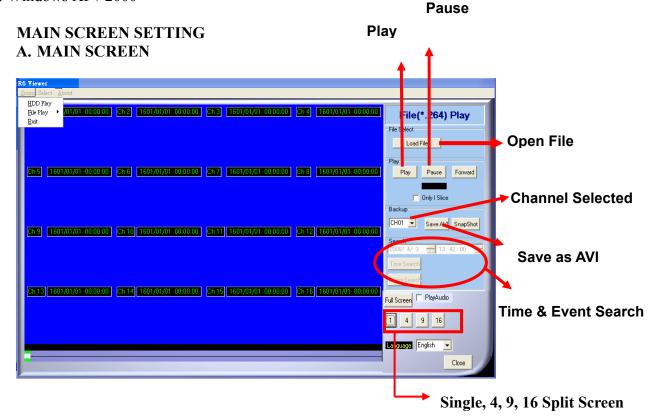
CPU:Intel P4 2.8G

MEMORY:512MB or above

VGA:64MB or above

VGA RESOLUTION:1024 x 768

OS: Windows XP / 2000

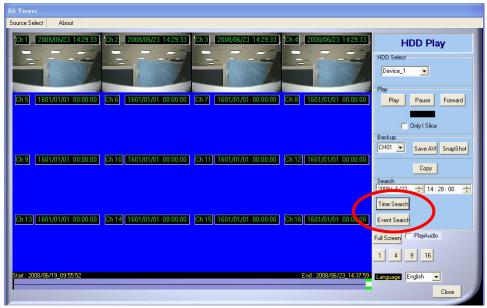


B. HDD PLAY

Play about all the data from the Hard disk of DVR or perform the specific Time and Event Search to play.

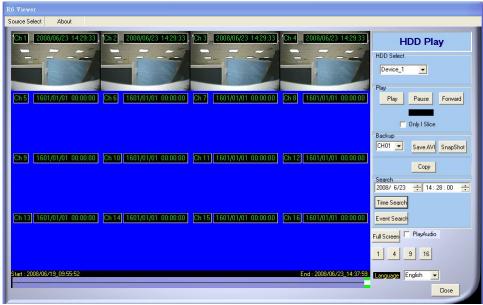
Note: Unload the DVR HDD first and connect to the PC to play the HDD. DVR

software (R6Viewer.exe) can get from USB Playback, DVD-RW Playback and "Player" within "Others" blank of Network viewing.



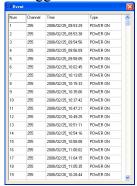
B-1. TIME SEARCH

Insert search Date and Time and then click to play all the searched film.



B-2. EVENT SEARCH

It will display all the events which are reserved within the DVR HDD after press Event Search (Shown in the following) and double click left button of mouse to trigger event.



B-3. HDD COPY

Copied and reserved the DVR HDD data to other data storage device.



Then, select the "StartTime" and "EndTime".



Save

After that, press button to choose the storage destination and press to start reserving.

Copy

Save to start reserving.

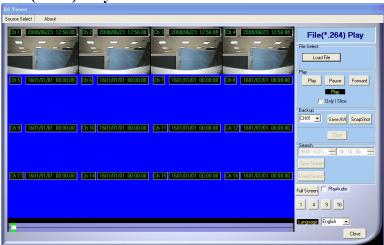
Save is To start reserving.

Finally, the complete information will pop-up while finished storage.

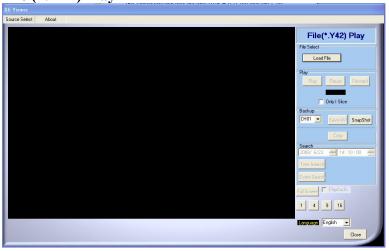


(R6 Viewer.exe) can play not only DVR H.D.D. but also the *.264 and *.Y42 files which are reserved within the data storage devices. (i.e. CD/DVD disc, pen drive and the PC H.D.D which the data backup from DVR H.D.D)

C. File (*.264) Play

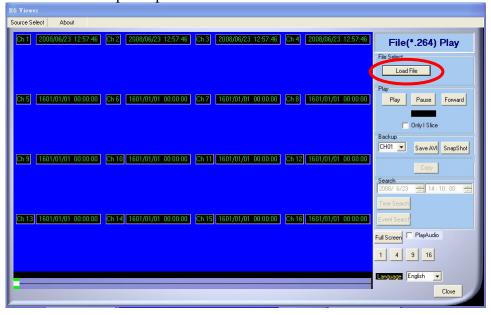


D. File (*.Y42) Play

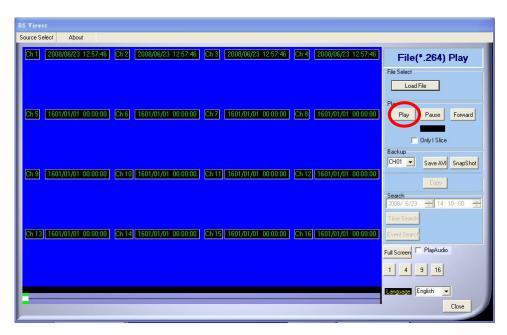


5.2 CD/DVD BACKUP PLAYBACK

A. Insert the CD/DVD disk into CD/DVD ROM, the software will auto pop out, and select "Load File" and pick up the file.



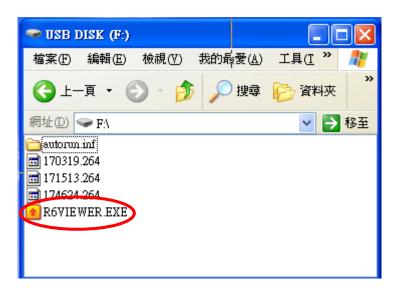
B. Press the play icon to play the video.



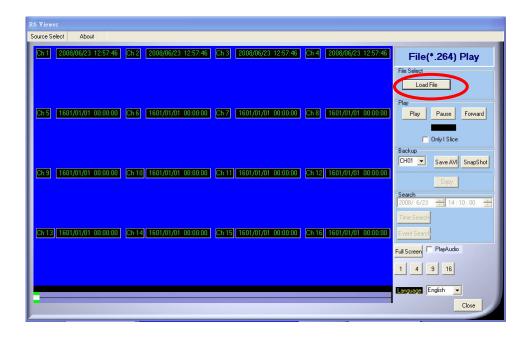
5.3 USB & LOCAL BACKUP FILE PLAYBACK

A. Plug the USB disk into PC or check the local backup folder.

If using USB mode, please double click the player.exe from the pop-up diagram. (As below)

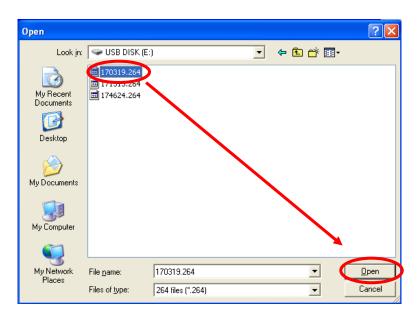


B. The play backup program would appear on the screen, select "Load File".

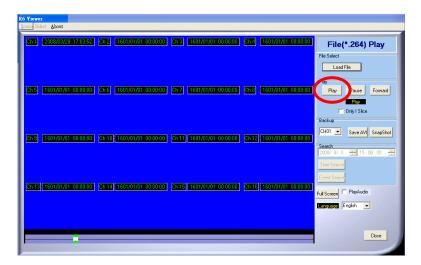


C. Open the USB disk located driver letter. (Example E:) or the local backup folder, and pick the file to playback.

The backup file will named as the time when backup, as like: 170319.264 will be 17:03:19

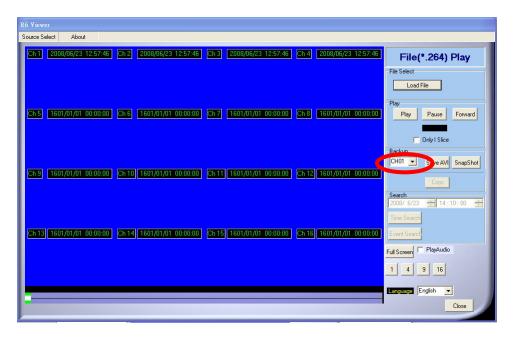


D. Press the play icon to play the video or still picture.



5.4 BACKUP FILE TO AVI

A. Please select specific channel to backup.



- **B.** During video playback mode please press AVI bottom Save AVI to start.
- C. Make up a filename and path than press bottom to start AVI backup.
- **D.** Press AVI bottom StopAVI to finish backup.

6 NETWORK VIEWING & PLAYBACK

SYSTEM REQUIREMENT

CPU: Intel Celeron 1.6G MEMORY: 256MB.

VGA: 32MB

VGA RESOLUTION: 1024 x 768.

OS: Windows XP / 2000

SUGGESTED REQUIREMENT

CPU:Intel P4 2.8G

MEMORY:512MB or above

VGA:64MB or above

VGA RESOLUTION:1024 x 768

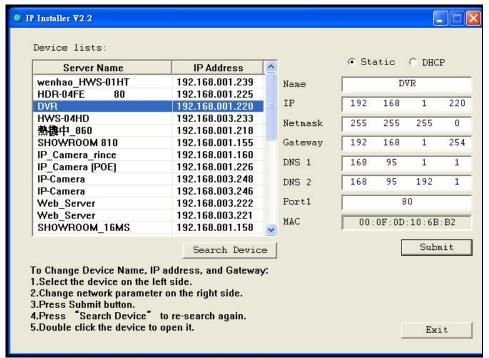
OS: Windows XP / 2000

6.1 IP ADDRESS SETUP ON PC SITE

Install cameras inside in LAN or use network cable to connect with PC. This is for IPInstallerEng.exe to set up IP address of cameras. If OS is Windows XP SP2 or above, the following Windows Security Alert will popup. Then, please click on <u>Unblock</u>.

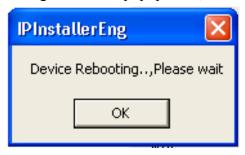


Then, IPInstallerEng.exe will popup: DVR default IP address is 192.168.1.220



NOTE: Please input correct network parameters without blank spaces.

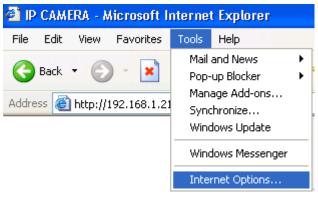
On Device Lists, it lists all servers. Click on one server and then its IP setting will show on the right side. After editing the parameters and clicking on Submit, the following dialogue box will popup. And, it will reboot the device with new parameters.

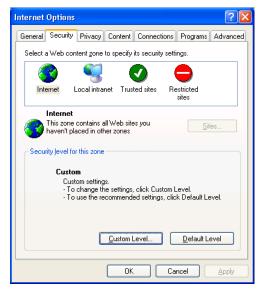


6.2 OPTIONAL MICROSOFT INTERNET EXPLORER SETUP OPTION 1: DISABLE ACTIVEX WARNING

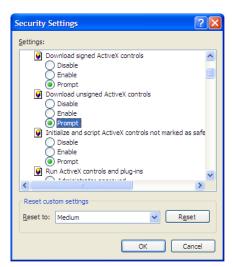
- A. IE → Tools → Internet Options → Security → Custom Level → Security Settings → Download unsigned ActiveX controls → Enable or Prompt (recommend).
- B. IE → Tools → Internet Options → Security → Custom Level → Security Settings → Initialize and script ActiveX controls not marked as safe → Enable or Prompt (recommend).

1 2





3





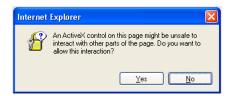
OK Cancel

4

5

Above three options are all based on select as the prompt.

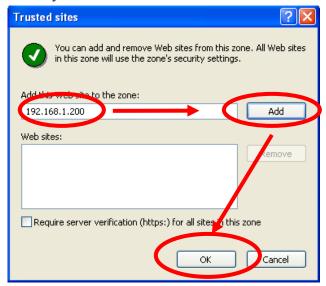
As indicated in the dialogue box. Please select "YES."



OPTION 2: ADD TO TRUSTED SITES

IE \rightarrow Tools \rightarrow Internet Options \rightarrow Security \rightarrow Trusted sites \rightarrow Sites



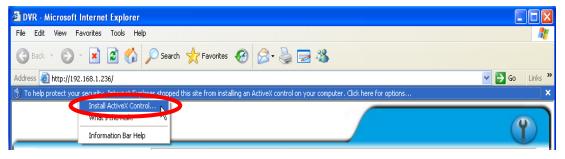


6.3 LOGIN

A. INSTALL ACTIVEX



B. START INSTALL ACTIVEX



C. ACCOUNT & PASSWORD LOGIN

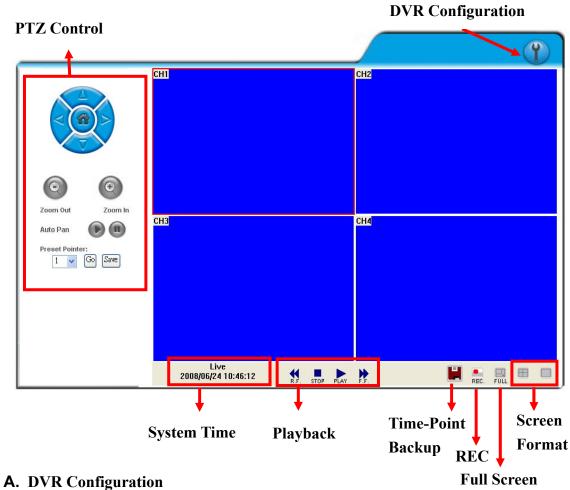
After IP setup and connect to network or LAN, type IP address on IE Browser directly. The following User name & Password Login window will popup.



Default user name: admin Default password: admin

6.4 REMOTE CONTROL

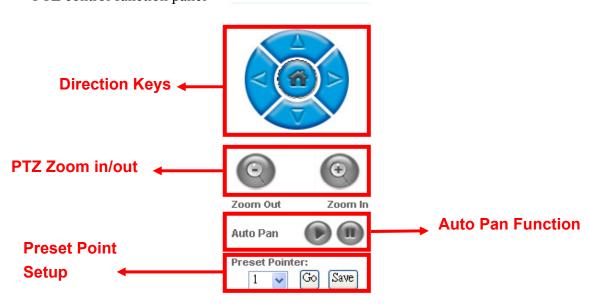
LIVE VIEWING

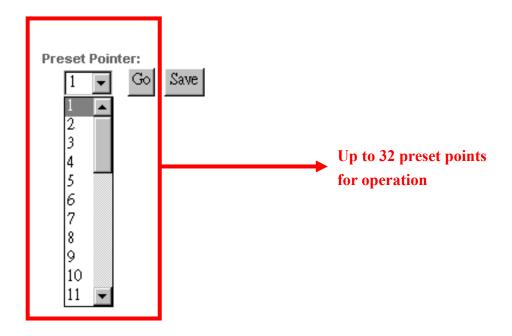


Get into DVR network menu.

B. PTZ Control

PTZ control function panel





C. SYSTEM TIME

Live viewing mode: The current live viewing time.

D. SCREEN FORMAT

Switch screen format and click twice to switch different channels with full screen.

- **E.** Full Screen. Click again to return.
- **F. REC.** Videos are saved as AVI file.
- G. PLAY Playback
- H. H. Time-Point Backup

Click and playback window will popup

PLAYBACK by TIME SEARCH & EVENT SEARCH



A. HDD Select

User can select HDD1 or HDD2 for playback

B. Playback Time

User can select the time then press "Time Search" for playback.

C. Time Search

User can select the time then press "Time Search" for playback.

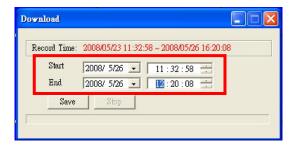
D. Event Search

User can select event item by pressing "Event Search" for playback.

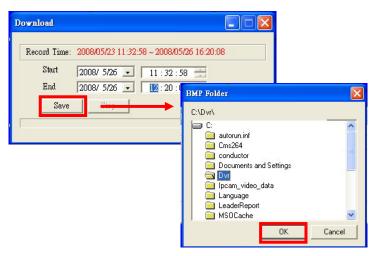
Click to operate Time-Point backup.

TIME-POINT BACKUP

First, select Start and End backup time which have to among the Record Time.



Then, click Save button to select the position on PC where the user is going to backup the data. After that, press OK button to start the backup.



Finally, double-click the left button of the mouse to open the saved backup file. The backup file 20080526113258.264 264 檔案 5,525 KB

will named as the time when start to backup, such as, (20080526113258.264) will be 2008/05/26 11:32:58.

OTHER FUNCTIONS



User can use other functions by clicking the left of mouse

A. Snapshot:

User can save any single picture from image.

B. Performance:

User can select image quality (high, medium & low).

C. Use Overlay:

User can use Overlay function.

D. Play audio:

User can play audio function by channel.

Note: remote user can receive audio from DVR & the audio will be saved with image when processing video backup.

6.5 CONFIGURE

A. System - System Information

	System Ir	nformation	
Server Informat	ion		
Server Name:	DVR-04CH		
MAC Address:	00:0f:0d:00:21:a6		
Language :	English	繁體中文 () 简体中:	文
NTP Setting			
Time zone:	GMT-08:00		
NTP Server:	198.123.30.132		
Interval:	12Hours		
			Apply

A-1 SYSTEM INFORMATION

SERVER NAME: This name will show on the IP Installer.

LANUGAGE: There are English, Traditional Chinese, and Simplified Chinese.

A-2 NTP Setting

NTP SERVER: Revise the time of DVR via different NTP Server.

Note: Time zone and Interval cannot adjust in here (User can adjust both in DATE and TIME SETUP option of DVR Menu).

B. SYSTEM – USER MANAGEMENT

	User Man	agement	
Anonymous Use	er Login		
	YES	O NO	Setting
Add User			
Username	:		
Password	:		
Confirm	:		
			Add/Set
User List			
Username	User Group	Modify	Remove
admin	Administrator	Edit	

User Management provides 3 levels of limits of authority: Administrator (the highest), User, and Guest.

Administrator: Possessing the highest level of authority to operate full functions within network.

User: Having Live Image and Video Playback authority. Moreover, PTZ controlled is included as well.

Guest: Only have Live Image authority.

Default administrator account: Username: admin Password: admin

B-1. ANONYMOUS USER LOGIN:

YES: Accept anonymous user login without password as guest login.

NO: Anonymous login unacceptable.

B-2. USER MANAGEMENT:

Add: Input Username and Password and then click on Add/Set to save.

Modify: Click on selected User name on User List and the following window will popup. After inputting Password and Confirm Password, click on **OK**.

Remove: Click on selected User name on the user list and click on **Remove**.



C. SYSTEM / SYSTEM UPDATE

C-1. Firmware Upgrade: Click on the "Browse" button to select the latest firmware and then press "Upgrade" button to upgrade the firmware.

	System Update
Firmware Upgrade	
Firmware Version:	\$1.0.10
New Firmware:	[瀏覽
	Upgrade

C-2. Load Default: There are three kinds of Settings. One is Load Setup From Default, another is Load Setup From and the other is Backup Setup.

Load Default	
Load Setup From Default	Setting
Load Setup From:	瀏覽
	Setting
Backup Setup	Download

Load Setup From Default: Press "Setting" button to load factory default.

Load Setup From: Click on "Browse..." button to select DVR setting file and then press "Setting" button to upload the setting file to DVR.

Backup Setup: Click on "Download" button to download the DVR setting file into the specific storage device.

D. NETWORK - IP SETTING

	IP Setting	
IP Assignment		
ODHCP		
Static		
IP Address:	192.168.1.231	
Subnet Mask:	255.255.255.0	
Gateway:	192.168.1.254	
DNS 0:	168.95.1.1	
DNS 1:	168.95.192.1	
Port Assignment		
Web Page Port:	80	
UPnP		
UPnP:		
		Apply

D-1. IP ASSIGNMENT

DHCP: In Dynamic Host Configuration Protocol (DHCP) mode, DHCP server will get setting done automatically.

STATIC IP: Please input IP address, Subnet Mask, and Gateway based on network environment.

D-2. PORT ASSIGNEMENT

With IP Share (Router), the following Ports needed to be adjusted in case of conflict.

D-3. UPnP

If UPnP service is enabled on your computer, the DVR will automatically be detected and a new icon will be added to "My Network Places". However, if UPnP service is disabled, the DVR will not be detected automatically.

Note: UPnP must be enabled on your computer.

E. NETWORK - PPPoE

	PPPoE	
PPPoE Setting		
C Enabled 💿 D	isabled	
Username:		
Password:		
Send mail after diale	d	
Enabled		
Subject:		Apply

E-1. PPPoE SETTING

Click on Enabled to enable ADSL dial function.

Username: Username for ADSL account. Password: Password for ADSL account.

After dialed successfully, new IP address will appear.

E-2. SEND MAIL AFTER DIALED

Click on Enabled to enable SEND MAIL AFTER DIALED function.

E-3. SUBJECT

Mail subject.

F. NETWORK / DDNS SETTING

	DDNS		
DDNS Setting			
C Enabled 💿	Disabled		
Provider:	dyndns.org	~	
Hostname:			
Username:			
Password:			
Schedule Update:	0	Minutes	
State			
			^
			~
			Apply

Note:

- Schedule Update: Feature of DDNS schedule update is designed for IP products which installed behind the ICS or NAT devices. Update range from every 5 (minutes) to 5000 (minutes) and 0 remain to off.
- Please note that the hostname will be blocked by DynDNS.org if schedule update is more than once every 5 minutes to 60 minutes. In general, schedule update in every 1440 minutes is recommended.

Click on Enabled to enable DDNS function.

F-1. DYNDNS.ORG



DDNS SETTING - DYNDNS.ORG

PROVIDER: Select dyndns.org

HOSTNAME: The registered hostname in DYNDNS.ORG. USERNAME: The registered username in DYNDNS.ORG. PASSWORD: The registered password in DYNDNS.ORG. SCHEDULE UPDATE: A period of time to update IP address.

STATE

- 1. Updating: Information update.
- 2. Idle: Stop service.
- 3. DDNS registered successfully, now log by http://<username>.ddns.camddns.com: Registered successfully.
- 4. Updating Failed, the name is already registered.
- 5. Updating Failed, please check your internet connection.

F-2. DDNS.CAMNNDS.COM



Note:

- Schedule Update: Feature of DDNS schedule update is designed for IP products which installed behind the ICS or NAT devices. Update range from every 5 (minutes) to 5000 (minutes) and 0 remain to off.
- Please note that the hostname will be blocked by DynDNS.org if schedule update is more than once every 5 minutes to 60 minutes. In general, schedule update in every 1440 minutes is recommended.

DDNS SETTING - DDNS.CAMDDNS.COM

PROVIDER: Select ddns.camddns.com

USERNAME: The registered username in DDNS.CAMDDNS.COM.

SCHEDULE UPDATE: A period of time to update IP address.

STATE

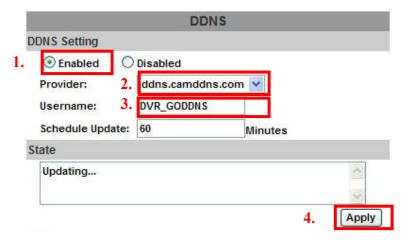
- 1. Updating: Information update.
- 2. Idle: Stop service.
- 3. DDNS registered successfully, now log by http://<username>.ddns.camddns.com: Registered successfully.
- 4. Updating Failed, the name is already registered.
- 5. Updating Failed, please check your internet connection.

DDNS Setting Steps:

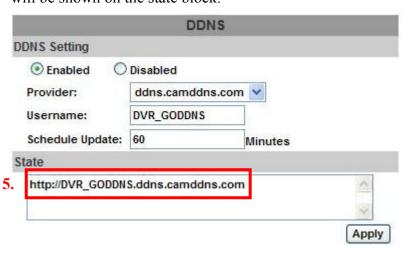
Press (1) "ENABLE" option to enable DDNS function and select (2)

"ddns.camddns.com" of the provider drop down list which is suggested to use. In the following, insert (3) the username which the user wants to apply

(i.e. **DVR_GODDNS** in here). After that, click (4) "Apply" button to apply a DDNS domain name.



Finally, the DVR domain name (5) (http://DVR_GODDNS.ddns.camddns.com) will be shown on the state block.



- **NOTE:** 1. If the user selects another provider which is ddns2.ydsdvr.com, all of the setting steps are the same with ddns.camddns.com setting.
 - 2. However, if dyndns.org provider is selected, please go to www.dyndns.org website to register the account first. The user has to fill in the username, password and hostname for applying the account. After the user applied the account successfully, the dyndns.org will give the user a complete DDNS domain name.
 - 3. If setting up IP schedule update too frequently, the IP may be blocked. In general, schedule update every day (1440 minutes) is recommended.

G. NETWORK / Mail & FTP

Click on "Motion" or "Alarm" option to enable Mail Setting and FTP Setting function.

	Mail & FTP
Mail Setting: Mo	tion 🗌 Alarm
Mail Server: Username: Password: Sender's Mail: Receiver's Mail: Bcc Mail:	
Event Subject:	ALARM MAIL
FTP Setting: Mot	ion 🗌 Alarm
FTP Server: Username: Password:	
Port: Path:	21 Apply

Mail Server: The IP address of Mail Server (i.e. mail.huntelec.com.tw).

Username: The username while log in to the mail server. **Password:** The password while log in to the mail server.

Sender's Mail: The sender's account when send the mail via this mail server.

Receiver's Mail: The receiver's mail address.

Bcc Mail: The receiver's mail address for Bcc Mail.

Event Subject: The subject of this mail. (Default value is ALARM MAIL)

FTP Server: The IP address of FTP Server.

Username: The username while log in to the ftp server. **Password:** The password while log in to the ftp server.

Port: The port number of file transmission. (Default value is 21) **Path:** The ftp path where the user wants to reserve the information.

Finally, click on Apply button to reserve the setting.

H. OTHERS / Player Downloaded

User can click "Run" button to download the player to local PC.



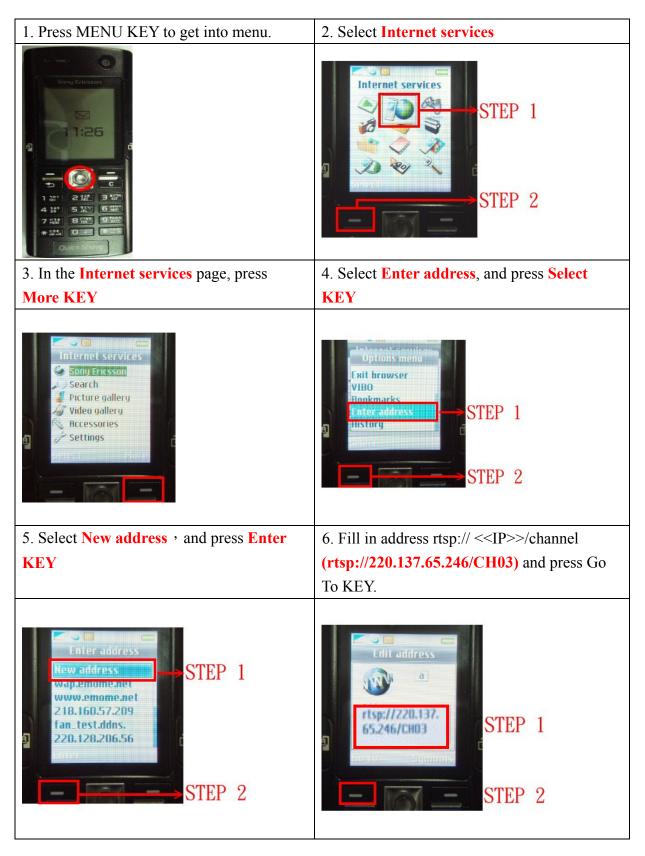
I. OTHERS / RTSP

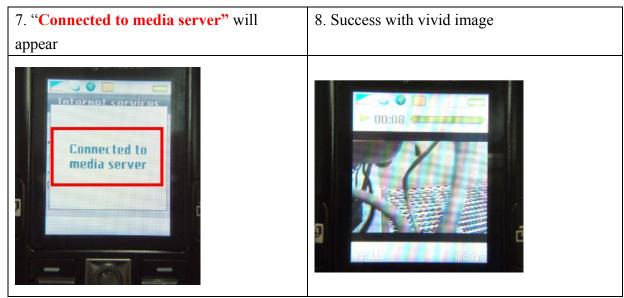
User can click Video Quality drop down list to change the video quality. There are Best, High, Standard, Medium and Low options.

	RTSP Setting	
Video Format:	MPEG4	
Video Quality:	High 💌	
3GPP Path:	CH	
For Example: rtsp://IP/CH01	The Live CH1 Stream	
rtsp://IP/CH02	The Live CH2 Stream	
		App

7 3GPP APPLICATION & SETTING

3GPP (also known as 3rd Generation Partnership Project) is a corporation which formulate 3rd-generation communication standard specification. Via this wireless communication protocol, the 3G mobile can perform the remote control. The following example is operated by Sony Ericsson 3G mobile phone:





- * 1. 3GPP BANDWIDTH: Minimum 30kbit/sec. per channel.
 2. CONNECTION NUMBERS: Maximum 16 people per channel.

APPENDIX A: RECORDING TIME LAPSE (HOURS) Half D1- 720x240

							80 GB	Н	ard Di	sk				Ur	nit: Hour
							PICTURE	Ql	JALITY	(KB)					
Recording		LOW				MEDIUN	1			HIGH				BEST	
Speed (PPS)	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average
(110)	1.00	3.80	2.40		2.00	6.00	4.00		5.00	10.00	7.50		6.00	17.00	11.50
120	194	51	122		97	32	64		38	19	28		32	11	21
60	388	102	245		194	64	129		77	38	57		64	22	43
30	776	204	490		388	129	258		155	77	116		129	45	87
15	1553	408	980		776	258	517		310	155	232		258	91	174
8	2912	766	1839		1456	485	970		582	291	436		485	171	328
4	5825	1533	3679		2912	970	1941		1165	582	873		970	342	656
160 GB Hard Disk Unit: Hou													it: Hour		
							PICTURE	Ql	JALITY	(KB)					
Recording		LOW				MEDIUN	1			HIGH				BEST	
Speed	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average
(PPS)	1.00	3.80	2.40		2.00	6.00	4.00	5.00	10.00	7.50		6.00	17.00	11.50	
120	388	102	245		194	64	129		77	38	57		64	22	43
60	776	204	490		388	129	258		155	77	116		129	45	87
30	1553	408	980		776	258	517		310	155	232		258	91	174
15	3106	817	1961		1553	517	1035		621	310	465		517	182	349
8	5825	1533	3679		2912	970	1941		1165	582	873		970	342	656
4	11650	3066	7358		5825	1941	3883		2330	1165	1747		1941	685	1313
	•	-	.		•	-	250 GB	Н	ard Di	sk	-			Ur	it: Hour
							PICTURE	Ql	JALITY	(KB)					
Recording		LOW				MEDIUN	1			HIGH				BEST	
Speed (PPS)	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average
(110)	1.00	3.80	2.40		2.00	6.00	4.00		5.00	10.00	7.50		6.00	17.00	11.50
120	606	159	382		303	101	202		121	60	90		101	35	68
60	1213	319	766		606	202	404		242	121	181		202	71	136
30	2427	638	1532		1213	404	808		485	242	363		404	142	273
15	4854	1277	3065		2427	809	1618		970	485	727		809	285	547
8	9102	2395	5748		4551	1517	3034		1820	910	1365		1517	535	1026
4	18204	4790	11497		9102	3034	6068		3640	1820	2730		3034	1070	2052

							400 GB	Н	ard Di	sk				Un	it: Hour
							PICTURE	QI	JALITY	(KB)					
Recording		LOW			MEDIUM HIGH									BEST	
Speed	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average
(PPS)	1.00	3.80	2.40		2.00	6.00	4.00		5.00	10.00	7.50		6.00	17.00	11.50
120	970	255	612		485	161	323		194	97	145		161	57	109
60	1941	511	1226		970	323	646		388	194	291		323	114	218
30	3883	1022	2452		1941	647	1294		776	388	582		647	228	437
15	7767	2044	4905		3883	1294	2588		1553	776	1164		1294	456	875
8	14563	3832	9197		7281	2427	4854		2912	1456	2184		2427	856	1641
4	29127	7665	18396		14563	4854	9708		5825	2912	4368		4854	1713	3283
	500 GB Hard Disk Unit: Ho												it: Hour		
December							PICTURE	Ql	JALITY	(KB)					
Recording Speed		LOW				MEDIUM	1			HIGH				BEST	
(PPS)	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average
(110)	1.00 3.80 2.40	2.40		2.00	6.00	4.00		5.00	10.00	7.50		6.00	17.00	11.50	
120	1213	319	766		606	202	404		242	121	181		202	71	136
60	2427	638	1532		1213	404	808		485	242	363		404	142	273
30	4854	1277	3065		2427	809	1618		970	485	727		809	285	547
15	9709	2555	6132		4854	1618	3236		1941	970	1455		1618	571	1094
8	18204	4790	11497		9102	3034	6068		3640	1820	2730		3034	1070	2052
4	36408	9581	22994		18204	6068	12136		7281	3640	5460		6068	2141	4104
	_						750 GB	На	ard Dis	sk				Un	it: Hour
D							PICTURE	Ql	JALITY	(KB)					
Recording Speed		LOW				MEDIUM	1			HIGH	T.			BEST	
(PPS)	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average
(· · •)	1.00	3.80	2.40		2.00	6.00	4.00		5.00	10.00	7.50		6.00	17.00	11.50
120	1820	479	1149		910	303	606		364	182	273		303	107	205
60	3640	958	2299		1820	606	1213		728	364	546		606	214	410
30	7281	1916	4598		3640	1213	2426		1456	728	1092		1213	428	820
15	14563	3832	9197		7281	2427	4854		2912	1456	2184		2427	856	1641
8	27306	7185	17245		13653	4551	9102		5461	2730	4095		4551	1606	3078
4	54613	14371	34492		27306	9102	18204		10922	5461	8191		9102	3212	6157

	1T Hard Disk Unit: Hour														t: Hour	
		PICTURE QUALITY (KB)														
Recording		LOW				MEDIUM	1			HIGH				BEST		
Speed (PPS)	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average	
(110)	1.00	3.80	2.40		2.00	6.00	4.00		5.00	10.00	7.50		6.00	17.00	11.50	
120	2427	638	1532		1213	404	808		485	242	363		404	142	273	
60	4854	1277	3065		2427	809	1618		970	485	727		809	285	547	
30	9709	2555	6132		4854	1618	3236		1941	970	1455		1618	571	1094	
15	19418	5110	12264		9709	3236	6472		3883	1941	2912		3236	1142	2189	
8	36408	9581	22994		18204	6068	12136		7281	3640	5460		6068	2141	4104	
4	72817	19162	45989		36408	12136	24272		14563	7281	10922		12136	4283	8209	

CIF-360x240

							80 GB H	laı	rd Disl	K				Uni	t: Hour	
		PICTURE QUALITY (KB)														
Recording		LOW				MEDIUM HIGH								BEST		
Speed (PPS)	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average	
(1.1.0)	0.50	1.90	1.20		1.00	3.00	2.00		2.50	5.00	3.75		3.00	8.75	5.88	
240	194	51	122		97	32	64		38	19	28		32	11	21	
120	388	102	245		194	64	129		77	38	57		64	22	43	
60	776	204	490		388	129	258		155	77	116		129	44	86	
30	1553	408	980		776	258	517		310	155	232		258	88	173	
15	3106	817	1961		1553	517	1035		621	310	465		517	177	347	
8	5825	1533	3679		2912	970	1941		1165	582	873		970	332	651	
4	11650	3066	7358		5825	1941	3883		2330	1165	1747		1941	665	1303	
							160 GB	Ha	ard Dis	sk				Uni	it: Hour	
.		PICTURE QUALITY (KB)														
Recording Speed		LOW				MEDIUM H					H BEST					
(PPS)	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average	
(1.1.0)	0.50	1.90	1.20		1.00	3.00	2.00		2.50	5.00	3.75		3.00	8.75	5.88	
240	388	102	245		194	64	129		77	38	57		64	22	43	
120	776	204	490		388	129	258		155	77	116		129	44	86	
60	1553	408	980		776	258	517		310	155	232		258	88	173	
30	3106	817	1961		1553	517	1035		621	310	465		517	177	347	
15	6213	1635	3924		3106	1035	2070		1242	621	931		1035	355	695	
8	11650	3066	7358		5825	1941	3883		2330	1165	1747		1941	665	1303	
4	23301	6132	14716		11650	3883	7766		4660	2330	3495		3883	1331	2607	

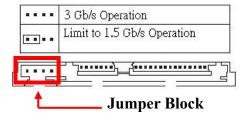
							250 GB	Ha	ard Dis	sk				Uni	t: Hour
	PICTURE QUALITY (KB)														
Recording		LOW			MEDIUM HIGH								BEST		
Speed	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average
(PPS)	0.50	1.90	1.20		1.00	3.00	2.00		2.50	5.00	3.75		3.00	8.75	5.88
240	606	159	382		303	101	202		121	60	90	į	101	34	67
120	1213	319	766		606	202	404		242	121	181		202	69	135
60	2427	638	1532		1213	404	808		485	242	363		404	138	271
30	4854	1277	3065		2427	809	1618		970	485	727		809	277	543
15	9709	2555	6132		4854	1618	3236		1941	970	1455		1618	554	1086
8	18204	4790	11497		9102	3034	6068		3640	1820	2730		3034	1040	2037
4	36408	9581	22994		18204	6068	12136		7281	3640	5460		6068	2080	4074
	•				•		400 GB	На	ard Dis	sk				Uni	t: Hour
						PICTURE QUALITY (KB)									
Recording		LOW				MEDIUM HIGH							BEST		
Speed (PPS)	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average
(5)	0.50	1.90	1.20		1.00	3.00	2.00		2.50	5.00	3.75		3.00	8.75	5.88
240	970	255	612		485	161	323		194	97	145		161	55	108
120	1941	511	1226		970	323	646		388	194	291		323	110	216
60	3883	1022	2452		1941	647	1294		776	388	582		647	221	434
30	7767	2044	4905		3883	1294	2588		1553	776	1164		1294	443	868
15	15534	4088	9811		7767	2589	5178		3106	1553	2329		2589	887	1738
8	29127	7665	18396		14563	4854	9708		5825	2912	4368		4854	1664	3259
4	58254	15330	36792		29127	9709	19418		11650	5825	8737		9709	3328	6518
							500 GB	Ha	ard Dis	sk				Uni	t: Hour
							PICTURE	Ql	JALITY	(KB)					
Recording		LOW				MEDIUM	1			HIGH				BEST	
Speed (PPS)	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average
(FF3)	0.50	1.90	1.20		1.00	3.00	2.00		2.50	5.00	3.75		3.00	8.75	5.88
240	1213	319	766		606	202	404		242	121	181		202	69	135
120	2427	638	1532		1213	404	808		485	242	363		404	138	271
60	4854	1277	3065	ĺ	2427	809	1618		970	485	727		809	277	543
30	9709	2555	6132		4854	1618	3236		1941	970	1455		1618	554	1086
15	19418	5110	12264		9709	3236	6472		3883	1941	2912		3236	1109	2172
8	36408	9581	22994		18204	6068	12136		7281	3640	5460		6068	2080	4074
4	72817	19162	45989		36408	12136	24272		14563	7281	10922		12136	4161	8148

						•	750 GB	На	rd Dis	sk				Uni	t: Hour	
December	PICTURE QUALITY (KB)															
Recording	LOW				MEDIUM HIGH								BEST			
Speed (PPS)	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	averag	
(110)	0.50	1.90	1.20		1.00	3.00	2.00		2.50	5.00	3.75		3.00	8.75	5.88	
240	1820	479	1149		910	303	606		364	182	273		303	104	203	
120	3640	958	2299		1820	606	1213		728	364	546		606	208	407	
60	7281	1916	4598		3640	1213	2426		1456	728	1092		1213	416	814	
30	14563	3832	9197		7281	2427	4854		2912	1456	2184		2427	832	1629	
15	29127	7665	18396		14563	4854	9708		5825	2912	4368		4854	1664	3259	
8	54613	14371	34492		27306	9102	18204		10922	5461	8191		9102	3120	6111	
4	109226	28743	68984		54613	18204	36408		21845	10922	16383		18204	6241	1222	
					•	,	IT Hard	Di	isk					Un	it: Hou	
							PICTURE	QI	JALITY	(KB)						
Recording	LOW				MEDIUM HIGH								BEST			
Speed (PPS)	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	averaç	
(FF3)	0.50	1.90	1.20		1.00	3.00	2.00		2.50	5.00	3.75		3.00	8.75	5.88	
240	2427	638	1532		1213	404	808		485	242	363		404	138	271	
120	4854	1277	3065		2427	809	1618		970	485	727		809	277	543	
60	9709	2555	6132		4854	1618	3236		1941	970	1455		1618	554	1086	
30	19418	5110	12264		9709	3236	6472		3883	1941	2912		3236	1109	2172	
15	38836	10220	24528		19418	6472	12945		7767	3883	5825		6472	2219	4345	
8	72817	19162	45989		36408	12136	24272		14563	7281	10922		12136	4161	8148	
4	145635	38325	91980		72817	24272	48544		29127	14563	21845		24272	8322	1629	

APPENDIX B: HDD COMPATIBLE TABLE

Brand	Model	Capacity	Speed
SEAGATE	ST380815AS	80G	7200 10
	ST3160815AS	160G	7200 10
	STM3250820AS	250G	7200 10
	ST3400620AS	400G	7200 10
	ST3750640AS	750G	7200 10
	ST3750330AS	750G	7200 11
	ST31000333AS	1000G	7200 11
	ST31000340AS	1000G	7200 11
	ST31000340NS	1000G	Barracuda ES.2
	ST31500341AS	1.5TB	7200 11
WD	WD2500AAKS	250G	7200 CB
	WD5000AACS	500G	7200 GP
	WD6400AAKS	640G	7200 BLUE
	WD7500AACS	750GB	7200 GP
	WD10EACS	1000G	7200 GP
HITACHI	HDS721616PLA380	160G	7200
	HDT725025VLA380	250G	7200
	HDT725032VLA360	320G	7200
	HDP725050GLA360	500G	7200
Last Update Date	2009/03/02		

* Please use **SATA I** Hard Disk and setup the **Jumper Block** to 1.5 Gb/s Operation. As the following image,



- * According to the machine test result, SEAGATE Hard Disk **ST3500320AC 500G** is incompatible for this DVR. Therefore, SEAGATE ST3500320AC 500G is not suggested to use.
- * This H.D.D. compatible table is for your reference.

APPENDIX C: ERROR MESSAGE LIST

ERROR MESSAGE	ERROR STATUS & REASON	NOTE
DISK ACCESS ERROR!	H.D.D. Data structure Un-normal.	
	Data does not record into DVR or bad sector on DVR	
	H.D.D. Please install another H.D.D. and perform the record	
	again.	
UPDATE FILE ERROR!	Please re-download the update file and update again.	
FIRMWARE UPGRADE	Please reboot the DVR and upgrade the firmware. Please	
FAILED	send the DVR back to repair when DVR is disability.	
MEDIA ACCESS FAIL!	The USB file format is incorrect (Please format the pen	
	drive to FAT32) or Pen Drive is setup to ONLY READ mode	
	(Please annul ONLY READ mode) when reserve the data by	
	using Pen Drive. The data cannot be burn into CD/DVD	
	disc. Please change another CD/DVD disc and backup the	
	file in CD/DVD disc storage.	
NO FILE!	There is no upgrade file within Pen Drive or the name of	
	upgrade file does not correspond with DVR format. Please	
	adjust the upgrade file name based on the following	
	information.	
	16CH -> UpdateR.bin	
	08CH -> Update8.bin	
	04CH -> Update4.bin	
USB DEVICE NOT FOUND	Pen Drive undetected. Please Unplug the Pen Drive and plug	
NO USB	it again.	
BACKUP START TIME	Backup start time error.	
ERROR		
BACKUPEND TIME ERROR	Backup end time error.	
DISK ERROR	The data cannot be burn into CD/DVD disc. Please change	
	another CD/DVD disc and backup the file.	
FAN FAILED	Fan Error Warning.	
NO LOG DATA	No Events Record.	
SCHEDULE RECORD	The condition is caused by trying to stop recording when	
	perform the schedule record. Please setup the record to	
	manual mode and then stop the record.	
PLEASE SELECT ONE	The message will be shown while using the ZOOM function	
CAMERA	under split screen condition. Please switch the screen into	
	full screen mode and then operate the ZOOM function.	